REMARKS/ARGUMENTS

Remarks

In the amendment to paragraph [0021], which appears in RESPONSE TO OFFICE ACTION, filed May 26, 2005, the word "bonded" is misspelled as "Boded" at line 11. The word "bonded" is correctly spelled at line 10 of paragraph [0021] as originally filed.

DISPOSITION OF THE CLAIMS

Claims 1-36 are pending in the application

Of the above claims 28 is withdrawn from consideration. Claims 1-27 and 29-36 are rejected.

ARGUMENTS

Claims rejections- 35USC §103

Claims 1-5, 21-25, 27, 29-32 and 35-36 are rejected under 35 U.S.C.103(a) as being unpatentable over Cheng et al (2004/0035854) in view of Fujihara (3,657,516). All of the remaining claims presently under consideration are rejected under 35U.S.C. 103 (a) as unpatentable over the hypothetical combination of Cheng et al '854 in view of Fujihara '516 and in view of one or more additional references.

The rejection of each and every claim presently under consideration is based upon the theory of inherency. More specifically, it is the Examiner's position that limitations which are explicitly set forth in the various claims under considerations are inherently present in the prior art reference Cheng et al '854.

A rejection can be made under 35 U.S.C 103 when the subject matter of the prior art appears to the Examiner to be identical to the subject matter sought to be

patented and the prior art is silent as to an inherent limitation, but the Examiner has the burden of proving the inherency. The Examiner must provide some rationale or evidence tending to show that the inherency upon which he relies is necessarily present in the thing described in the prior art reference. In re: Robertson, 169F 3d, 743,745, 49USPQ2d1949, 1950-51 (Fed Cir 1999) (citations omitted). (Emphasis added).

> In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the alleged inherent characteristic necessarily flows from the teachings of the applied prior art. Ex parte Levy 17USPQ2d, 1461,1464 (Bd. Pat. App. & Inter. (1990) (emphasis in original).

The Examiner's reliance upon asserted inherency to supply a missing limitation in the cited primary reference is found at page 2 paragraph 2 of the present Office Action under the heading DETAILED ACTION wherein it is stated, "and an inherently dielectric sheath 12 made of thermoplastic polyurethane (TPU), embracing the bundle 11, including a lower layer having an upper face inherently bonded to the lower surface of the bundle, and an upper layer having a lower face disposed in overlying direct contact engagement and unconnected relation to the surface of the bundle". The fact that the sheath 12 is made from a thermoplastic material does not mean that it is necessarily bonded to a surface of the bundle 11. At paragraph {0004} of Cheng et al. it is stated that et al. "...the primary object of the invention is to provide an electric heating wire that has a core wound by an oblate insulation layer.... At paragraph {0016} Cheng et al. further states, "The core 11 is wound axially in an even thickness by an oblate insulation layer 12.... Claim 1 of Cheng et al. calls for, "at least one insulation layer wound around the core with the outer most layer thereof having two sides forming wing flaps for stitching to and

anchoring on a blanket." Claim 3 of Cheng calls for, "the core being wound by at least one insulation layer ... ." The repeated reference to the insulation being wound around the core or bundle 11 precludes the necessity that it be bonded to the core or bundle or any argument that the insulation is necessarily bonded onto the core or bundle by an extrusion process, for example. Clearly the insulation taught by Cheng et al. is not inherently bonded to a surface of the bundle or core 11.

It is Applicant's contention that the present Office Action fails to establish a prima facie case of obviousness under 35 USC §103(a) to support the rejection of any one of the claims under consideration, as originally filed, for reasons hereinafter set forth.

The Examiner has merely made a wholly unsupported assertion that the patent to Cheng et al '854 discloses a flat bundle of carbon fibers having generally flat uppers and lower surface portions and a dielectric sheath embracing the bundle and including a lower layer having an upper face inherently bonded to the lower surface of the bundle, and an upper layer having a lower face disposed in overlying direct contact engagement and connected relation to the upper surface of the bundle. Applicant submits that Cheng is entirely silent as to the relationship between the faces of the sheath and the associated surfaces of the bundle. The Examiner has offered no rationale or evidence to indicate why it is necessary that an upper face of the sheath be bonded to a lower surface of the bundle and a lower face of the sheath be disposed in overlying direct contact engagement and unconnected relation to another surface of the bundle.

It is only after the Examiner has presented evidence or reasoning tending to show inherency that the burden of proof shifts to the Applicant to show an unobvious difference between the article sort to be patented and the disclosure of

the prior art reference. Since the Examiner has failed to present either evidence or reasoning tending to support the alleged inherency he has failed to establish a prima facie case for rejection under 35 U.S.C. 102 or 35 U.S.C. 103. Hence, the present rejections are without merit with respect to all of the claims presently under consideration. The requirements for rejection based on the inherency and the Examiner's burden of proof associated with such rejection is discussed in MPEP 2112.

All of the claims presently under consideration call for a heating element assembly comprising continuous axially extended carbon fibers or filaments. In the present Office Action at page 2, paragraph 2, it is stated, "Cheng teaches a heating element assembly comprising ... a multiplicity of continuous carbon fibers... ." This statement is incorrect. What Cheng et al. discloses and claims is an electric heating wire, comprising: "a core consisting of a plurality of strands made of graphite fibers: and at least one insulation layer wound around the core ... ." The use of the transitional phrase "consisting of" in both the specification and the claims imposes limitations on the subject matter disclosed and claimed. When the phrase "consists of" or "consisting of" appears in a clause of the body of a claim, rather than immediately following the preamble, as is the case here, it limits only the elements set forth in that clause. Thus, Cheng et al. discloses and claims a plurality of strands of graphite fiber. The strands, which form the core, are formed of graphite fibers. Thus, the core 11 in the electrical heating wire of the Cheng et al. invention is formed by combining a plurality of strands of graphite fibers, as it clearly stated in the Cheng disclosure at paragraph 0019. The individual strands may be formed by twisting together graphite fibers. Cheng et al. is silent as to the length of the fibers, but does not teach continuous fibers as called for in Applicant's claims.

The heating elements set forth in Applicant's claims in its broadest form comprises a substantially flat bundle formed by a multiplicity of continuous axially extending carbon fibers. Continuous fibers are not anticipated by the heating element disclosed in the prior art reference Cheng et al. nor by the heating panel of Fujihara which employs random fibers from 0.5 to 20.0 millimeters in length.

It is Applicant's contention that there is no motivation or suggestion in either the reference Cheng, et al. '854 or Fujihara (3,657,516) or in the knowledge generally available to one of ordinary skill in the art to modify Cheng et al in view of Fujihara or to combine the teachings of these two references. Cheng et al. discloses an electric heating cable whereas Fujihara is concerned with a heating panel in the form of a sealed integral panel assembly wherein electrically resistive paper or felt-like porous board is sealed between layers of paper or cloth sheets impregnated by synthetic resin. The electrically resistive paper or felt-like board contains carbon fibers arranged in random directions and in at least partial contact with each other. The structures taught by the two references are quite dissimilar. Considerable redesign would be necessary to combine the teachings of the references or to modify one in view of the other.

To justify the modification of Cheng et al. in view of Fujihara, at page 2, paragraph 2 of the present Office Action, "It would have been obvious to one having ordinary skill in the art to modify Cheng's invention to include a diameter and resistance range of carbon fiber heating element as taught Fujihara... in order to make the flat heating cable (the Cheng cable) more durable." The Examiner is "borrowing" certain selected physical properties from the carbon fiber of Fujihara, namely diameter and resistance range, to modify Cheng in the image of certain of Applicant's claimed structures while ignoring other physical characteristics of the

Fujihara carbon fiber such as the length of fibers, which range in length from 0.5 to 20.0 millimeters – hardly continuous (See Fujihara, column 3, lines 10-15). It is Applicant's contention that the Examiner is employing hindsight to reconstruct Applicant's invention and using Applicant's disclosure as a blue print.

It is Applicant's contention that there is no motivation for modifying the hypothetical combination of Cheng et al and Fujihara in view of McMahon, et al (6,045,906).

As the title to the McMahon patent suggests, the McMahon invention relates to processes for preparing fibers useful in forming or molding composite articles and more particularly relates to carbon fiber tows containing fiber blends, which are useful in preparing such composite articles (see McMahon, column 1, Background of the Invention). In the present Office Action, paragraph 3, page 3, it is stated that "McMahon discloses separate webs (Figs. 1-2) and thermal plastic material for "the sheath" comprising polyester (column 2, lines 63-67) and Kapton (column 14, lines 24-39)".

McMahon does not disclose separate webs in Figs. 1 and 2. Further, McMahon does not disclose a "sheath" as stated in paragraph 3 on page 4 of the present Office Action. The ABSTRACT and the SUMMARY OF INVENTION clearly state what is shown in Figs. 1 and 2 of McMahon, namely a process for making an intermixed tow which starts with a tow and ends with a tow. Clearly, no webs or sheath are shown or described. In fact, one cannot find the word "web" or "webs" or the word "sheath" at any point in the McMahon patent, although such structures are present in the invention sought to be patented. While the statement from paragraph 3, page 3 of the present Office Action may be attributed to a mere careless use of words by the examiner, it works out to be a misrepresentation of that which is

disclosed in Figs. 1 and 2 of the McMahon patent, which brings the cited reference into closer alignment with the invention sought to be patented. Actually, the tows produced in accordance with the McMahon patent are used to make composite molded articles which is abundantly clear from the title of the patent and the disclosed subject matter, when considered as a whole.

For the various aforesaid reasons, a prima facie case for obviousness has not been established. Accordingly, it is respectfully submitted that all of the claims presently under consideration should be allowed.

Applicant believes no fee is due for the filing of this Response, however if it is determined that a fee is required, it may be charged to Deposit Account No. 13-0235 maintained by Applicant's attorney.

Respectfully submitted,

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